Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of the claims in the application:

Listing of Claims

1. (original) A method for the preparation of a specimen for atom probe analysis comprising:

providing a slab of material from which the specimen will be taken or analyzed;

defining a plurality of posts in the slab; and

removing at least one post from the slab.

2. (original) The method of claim 1 further comprising mounting the post on a pin.

3. (original) The method of claim 1 further comprising shaping the post to a tip shape suitable for use in the atom probe.

4. (original) The method of claim 1 where defining a plurality of posts in the slab comprises cross cutting grooves into the slab.

5. (original) The method of claim 4 where cross cutting grooves into the slab comprising cutting intersecting grooves with a saw.

6. (original) The method of claim 5 where cutting intersecting grooves with a saw comprises cutting at least two sets of parallel grooves at an arbitrarily chosen angle to each other.

7. (original) The method of claim 4 where cross cutting grooves into the slab further comprises filling each groove with a supporting material prior to cutting parallel or intersecting grooves thereto.

8. (original) The method of claim 1 where defining a plurality of posts in the slab comprises forming a plurality of regularly shaped posts in the slab by uniformly removing material around each post to isolate each post from each other post in the plurality of posts.

9. (original) The method of claim 8 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by mechanical means.

10. (original) The method of claim 8 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by electrical means.

11. (original) The method of claim 8 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by chemical means.

12. (original) The method of claim 8 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by laser means.

13. (original) The method of claim 9 where removing the material by mechanical means comprises removing the material with a dicing saw.

14. (original) The method of claim 2 where removing at least one post from the slab comprises fracturing a single post from the slab.

15. (original) The method of claim 2 where removing at least one post from the slab comprises separating a section from the slab which section includes more than one post connected to the section to provide an array of posts.

16. (original) The method of claim 3 where shaping the post to a tip shape suitable for use in the atom probe comprises focus-ion-beam milling the post to a tip shape.

17. (original) The method of claim 1 further comprising shaping each of the posts of the array to a tip shape suitable for use in the atom probe while each post remains connected to the section.

18. (original) The method of claim 1 where defining a plurality of posts comprises shaping each of the posts of the array so that the posts are spaced by a predetermined distance to avoid interference between separate posts when subsequently used in an atom probe.

19. (original) A source of specimens for use in atom probe analysis comprising a slab of material from which the specimen will be taken, which has been defined into a plurality of posts.

20. (original) The source of claim 19 where at least one post is removed from the slab and the post has been shaped to a tip suitable for use in the atom probe.

21. (original) The source of claim 19 where the plurality of posts defined in the slab have been defined by cross cutting grooves into the slab.

22. (original) The source of claim 20 where the shaped post is focus-ion-beam milled to a tip shape.

23. (original) The source of claim 22 where the slab has a flattened surface into which the posts are defined.

24. (original) The source of claim 19 where defining a plurality of posts comprises shaping each of the posts of the array so that the posts are spaced by a predetermined distance to avoid interference between separate posts when subsequently used in an atom probe.

25. (new) A method for the preparation of a substantially nonconductive specimen for atom probe analysis comprising:

providing a slab of material from which the specimen will be taken or analyzed;

defining a plurality of regularly shaped posts in the slab, the posts having a substantially quadrilateral cross section and a prismatic longitudinal axis, the posts being defined by grooves formed into the slab to the depth of the post as the starting material for the specimen; and

removing at least one post from the slab.

26. (new) The method of claim 25 further comprising shaping the post to a tip shape suitable for use in the atom probe.

27. (new) The method of claim 25 where defining a plurality of posts in the slab comprises cross sawing grooves into the slab.

28. (new) The method of claim 26 where cross sawing grooves into the slab further comprises filling each groove with a supporting material prior to sawing parallel or intersecting grooves thereto.

29. (new) A method for the preparation of nonmetallic specimen for atom probe analysis comprising:

providing a slab of material from which the specimen will be taken or analyzed;

nonphotolithographically defining a plurality of regularly shaped posts in the slab to a depth of the post as the starting material for the specimen by uniformly removing material around each regularly shaped post to isolate each regularly shaped post from each other regularly shaped post in the plurality of regularly shaped posts;

removing at least one regularly shaped post from the slab; and

selectively removing additional material from the regularly shaped post.

30. (new) The method of claim 29 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by electrical means.

31. (new) The method of claim 29 where uniformly removing material around each post to isolate each post from each other post in the plurality of posts comprises removing the material by laser means.

32. (new) The method of claim 29 where removing the material around each post to isolate each post from each other post in the plurality of posts comprises removing the material with a dicing saw.

33. (new) The method of claim 29 where removing at least one post from the slab comprises fracturing a plurality of posts from the slab to provide separate specimens.

34. (new) The method of claim 29 where removing at least one post from the slab comprises separating a section from the slab which section includes a plurality of posts which remain connected to the section to provide an array of specimens.

35. (new) The method of claim 34 further comprising shaping each of the posts of the array to a tip shape suitable for use in atom probe analysis while each post remains connected to the section.

36. (new) The method of claim 35 where shaping each of posts comprises shaping each of the posts of the array so that the posts are spaced by a predetermined distance to avoid interference between separate posts when subsequently used in atom probe analysis.

37. (new) A source of substantially nonconductive specimens for use in atom probe analysis comprising a slab of material from which the specimen will be taken into which material microgrooves have been defined to a predetermined depth to define a plurality of quadrilateral posts.

38. (new) A method for the preparation of a specimen for atom probe analysis comprising:

providing a slab of material from which the specimen will be taken or analyzed;

defining a plurality of regularly shaped posts in the slab by cross sawing a plurality of microgrooves in the slab to the depth of the post as the starting material for the specimen;

filling each microgroove with a supporting material prior to cutting parallel or intersecting microgrooves; and

removing at least one post from the slab.

39. (new) A method for the preparation of a substantially nonconductive specimen for atom probe analysis comprising:

providing a slab of material from which the specimen will be taken or analyzed;

defining a plurality of regularly shaped posts in the slab, the posts having a substantially quadrilateral cross section and a prismatic longitudinal axis, the posts being defined by grooves formed into the slab to the depth of the post as the starting material for the specimen; and

removing at least one post from the slab.

40. (new) The method of claim 39 where defining a plurality of regularly shaped posts by grooves into the slab further comprises filling each groove with a supporting material prior to defining parallel or intersecting grooves thereto.